



**NRL BAA Announcement  
# 72-09-01**

**REMOTE SENSORS AND IMAGING SYSTEMS**

The Remote Sensing Division (NRL Code 7200) conducts a program of basic research, science, and applications aimed at the development of new concepts for sensors and imaging systems for objects and targets on the Earth and in the near-Earth environment, as well as deep space. The research focuses on the discovery and understanding of the basic physical principles and mechanisms that give rise to the background environmental emission and targets of interest and to absorption and emission mechanisms of the intervening medium. The development effort includes active and passive sensor systems to be used for the study and analysis of the physical characteristics of phenomena that give rise to naturally occurring background radiation, such as that due to the Earth's atmosphere and oceans, as well as man-made or induced phenomena such as ship/submarine hydrographic effects. The research includes theoretical, laboratory, and field experiments leading to ground based, airborne and space systems for use in such areas as remote sensing, astrometry, astrophysics, surveillance, environment and improved operational support systems for the Navy. Areas of interest include all levels of the atmosphere (lower, middle, and upper) and space environment, air/sea interface and oceanography. Special emphasis is given to developing space-based sensors and improving the exploitation of existing space systems. Innovative research is desired in areas of interest including, but not limited to, the following:

- (1) The impact of the physics of atmosphere and ocean interaction on physical and biological sea surface characteristics, from the viewpoint of global surveillance systems.
- (2) Research attempting breakthrough advancements in imaging data compression methodology, scene classification, and coherent/non-coherent sensor exploitation.
- (3) Atmospheric gases and aerosol measurements. Research in this area is wide ranging: propagation effects, pollutant monitoring, global climate change, and cloud physics.

The foregoing description should be interpreted within the following guidelines which apply to all BAA topics but are stated here for emphasis: (1) NRL is not interested in concepts that have already been developed or proven (even if they have never been sold before); (2) NRL seeks proposals for scientific study and experimentation directed toward advancing the state-of-the-art or increasing knowledge and understanding; (3)

proposals of services or for evolutionary engineering of improvements are inappropriate under BAA authority and are not desired; (4) deliverables should demonstrate the results of scientific study and experimentation rather than focus on a specific system or hardware solution.

Address White Papers (WP) to Code 7220, Telephone 202-767-8253, FAX 202-767-7885, or [e-mail](#). Allow one month before requesting confirmation of receipt of WP, if confirmation is desired. Substantive contact should not take place prior to evaluation of a WP by NRL. If necessary, NRL will initiate substantive contact.